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January 22nd, 1919.

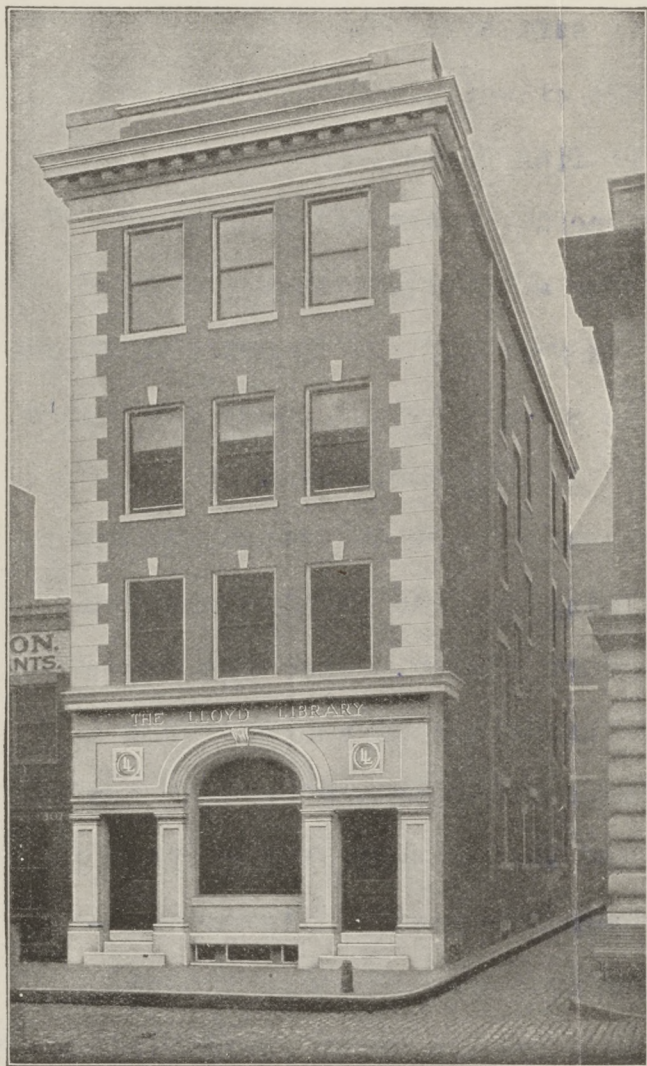
Dr. I. M. Johnston,
Upland, Calif.

Dear Dr. Johnston:

After considerable delay I have succeeded in working over both the packages you have sent, and take pleasure in handing you my determinations herewith as far as I am able. I also enclose printer's copy for several as they will be published.

You are finding an unusual lot of *Catastomas* which seem to prevail in your section, and it will pay you to observe and study them carefully. There is never any trouble in recognizing a *Catastoma* if you will put a little of its gleba under the microscope as they are all characterized by exactly the same capillitium which is broken into little unbranched pieces and is not continuous as it is in other *Lycoperdon* genera and not forked and running out into spines as it is in *Bovista* and related genera. In fact you can tell a *Catastoma* at a glance under the microscope.

I am pleased to mail you the publications you have



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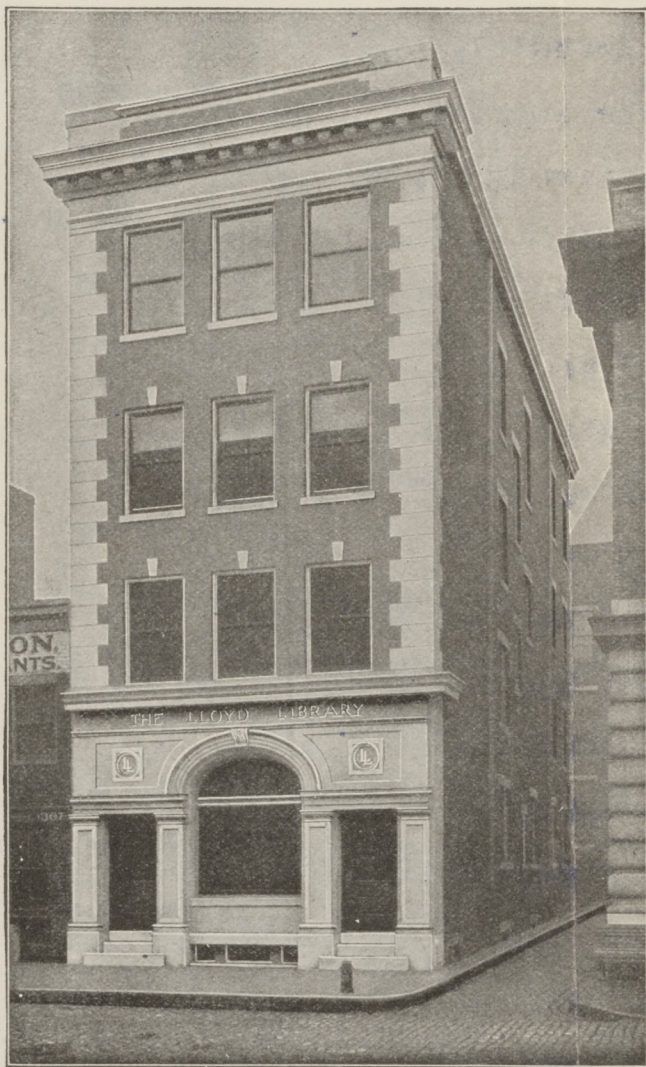
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Dr. I. M. Johnston -2

requested and trust their safe arrival. I have not changed my views as to the classification of *Polyporus corruscans* which you will find described in detail in the Apus pamphlet of *Polyporus*, which I supposed you had. *Polyporus corruscans* is the same species as *Polyporus rheades*, but it is the oak form and is very different in general appearance and is a convenient name for it.

I am much interested in hypogaeal fungi although I have never done the detailed work with them which one should do before determining specimens. I am quite familiar with the literature and can determine them as far as any one can from the literature. Fortunately the hypogaeal fungi were worked up by two masters in Europe, Vittadini and Tulasne, and this is one of the few sections of fungi where the European species can be definitely determined from the publications. In this country practically all that has been done is by Harkness of your state and I am sorry that I can not speak of his work in the same way that I can of the European masters. Harkness' descriptions are very scanty and I feel that



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but few species can be definitely located from his work. The only way to determine them would be to make a trip to California and study them in his collection at Stanford and you are in better position to do that than I am.

I am returning herewith your list of fungi and have added the authors' names as I presume you wish the "authorities". I would use all the names you have employed with the exception of *Gyrophragmium decipiens* which is a synonym for *Gyrophragmium Delilei* of Europe, and now well established as being the same plant.

I am sorry I can not help you out with the *Trametes* but I receive so many specimens that I rarely remember individual cases and do not remember the circumstances regarding this, and for a similar reason as the specimen is with hundreds of others going through the labeling process I can not put my hand on it. As you state the plant is common with you I would suggest that you send me an additional specimen and if you will remind me I will advise you regarding its relationships.

Yours very truly, C. G. Lloyd.

Dictated.



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X 294 *Calvatia sculpta*. See Note

Not numbered - Dark gelatinous plant on alder. *Exidia glandulosa*, Bulliard.

1684 *Polystictus*. Specimen scanty and pores covered with a mould, but probably *Polystictus perennis*.

Palmer Canyon deep leaf-mold Jan 19/1917 Crawford 1684

Not numbered. A single, little reddish brown puff ball. *Lycoperdon*. Close to *pusillum* in spores but the peridium is more like a *Bovista* and the capillitium is on the *Catastoma* order. It should not be named excepting from a more ample collection.

✓ 278 *Phlebia radiata*. I do not find in this the imbedded bodies of No. 280 but I think it is the same.

Cyg C. on alnus 3000ft. Dec 22

291 *Fomes Bakeri*, Murrill. (Cfr. Syn. *Fomes*, p. 243).

from oak in Live Oak Canyon.

X 289 *Lycoperdon Turneri*, Ellis. Note the large cells of the sterile base distinguish it from similar plants (*pseudopusillum*, *cepaforme*, etc.) that you have sent.

Live Oak C. among oak leaves 1700ft Dec 29

✓ 280 *Phlebia radiata*, Fries. To the eye at least, but imbedded in the hymenium I find large, oblong, hyaline bodies, which I do not find in *Phlebia radiata*. I would not say it is different on this account.

in Achys Cyg C. Dec 22

✓ 279 *Polyporus gilvus*, Schweinitz.

on alnus Cyg C. 2500ft Dec 22

✓ 285 *Fomes applanatus*, Persoon. Agrees exactly with the European plant excepting crust is harder.

Peach tree at San Bernardino 1000ft. Dec 27

✓ 283 *Fomes applanatus*, Persoon. Same as No. 285. The white context of the specimen is an altered (diseased) condition, I judge from the attack of some fungus parasite, the globose spores of which are found under the microscope.

Saboc laser at Red W. 1300ft. Dec 25



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250 *Trametes carnea*, Nees. Cfr. *Fomes* Synopsis.*Stoddard C. what I took to be T. annabensis*245 *Polystictus versicolor*, Linn. A distinct form.*Ever Canon*260 *Polystictus hirsutus*, Willdenow. Form but so different from the usual it is well entitled to a name. The flesh is thicker and softer and the pale surface, glabrous excepting the border, is different from the Eastern plant.*Stoddard C.*255 *Poria undata*, Pers. *Poria subacida*, Peck is the same thing for me. *Spores S. Ant. on Pseudot. Dec 15 (5700ft) wet substrate*254 *Poria aurantiaca*, Rostk. (Europe) = *Poria aurea*, Peck.*up S. Ant. on alnus (5700ft) Dec 15*253 *Poria undata*, Persoon. Same as 255.*Ever Canon on alnus in very wet situation Dec 1 (5500ft)*252 *Poria*. *Porias* have never been worked out. This is a well marked species with its cottony mycelium and allantoid spores. Spores are about 8 mic. long.*Cystidia none. Sp. S. Ant. under side Pseudot (5700ft) Dec 15*243 *Poria*. Very familiar but I have no name for it. Basidia are well preserved. Spores cylindrical, 4-5 X 8-12, with oblique apiculus. *Sabot at R.N. thought it was Trametes.*X 216 *Lycoperdon pseudo-pusillum*. But this corresponds to *Lycoperdon cepaeforme* excepting that it has distinct, rough spores. *L. pusillum*, *L. cepaeforme* and *L. pseudo-pusillum* are all forms of same species.*Summit Pk under Q. large & small (4700-5200ft) Nov 17*X 234 *Catastoma Johnstonii*. Cucc. 3000ft Nov 10X 233 *Catastoma Johnstonii*. Cucc. sunny rocky hillside 3200ft Nov 17X 237 *Catastoma Johnstonii* Cucc. 3200ft. Nov 10 -X 232 *Catastoma Johnstonii*. Cucc. side of trail in chaps belt. 3000ft. Nov 10.X 239 *Catastoma Johnstonii*. Cucc. along trail in chaps 3000ft + Nov 10X 229 *Lycoperdon pusillum*, Batsch.*Cucc. under chaps on east facing slope. 3000ft. Nov 10*



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CINCINNATI, ODr. ^{U.S.A.} I. M. Johnston -2X286 *Catastoma Uplandii*. See Note.*Open grassy ground near Upland 1200 Dec 25*282 *Polyporus dryadeus*. See Note.*Alnus in Ery. Cana (looks like *P. gelvus*)*

281 *Polyporus dryadeus*, Persoon. Nice collection. You can tell this from the similar *Polyporus corruscans* by the spores which are pale in *dryadeus*, dark in *corruscans*. This is not the same as our eastern form, and perhaps merits a separate name. It differs in harder context, acute margin and more abundant setae.

*O. chrysosporus in Talmers (looks like *P. gelvus*)*

A 21 *Gyrophragmium Delilei*, Montagne. Same as *decipiens* Peck. This you will find also on your sand dunes. Only known with us from your California coast.



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X 251 *Lycoperdon pseudo-pusillum*, Hollos. If that is different from *pusillum*, but note these spores are not "smooth". upper bar cut C. under pine rocky ground 6000ft Dec 15-18 (P.L.)

X 228 *Lycoperdon pseudo-pusillum*, Hollos.

One can under chop N. facing slope 4500ft Nov 10

269 *Polyporus Schweinitzii*, Fries. It usually does not grow on trunks but attached to roots with a stem, and thus of course a very different appearing plant from this.

270 From context color probably abnormal *Fomes robustus* Karsten, but I would not name it. (but brown one growing on *Eucalypt* on windbreak).

268 *Polyporus dryadeus*. From the spores (globose, 8 mic. very pale color). I should say this was as above, but old effete and color entirely changed.

on *Platanus* at *Haystack* C.

X 264 *Calvatia*. This is quite close but not the same as *Calvatia craniiformis*. The main difference is the gleba color, much darker, and the spores (about 6 mic.) larger than in our Eastern plant (about 4 mic.) If I ever publish systematically on *Calvatia* I shall give it a name unless you wish to publish it, which will be preferable to me. Under *Q. agrifolia* at Fk Arc (2900ft) Dec 8 '79 (L)

X 248 *Lycoperdon pusillum*, Batsch.

Stodd C. along trail under brush 3000ft Dec 8

X 230 *Lycoperdon pusillum*, Batsch.

Deer C. Wash under *Q. chrysa* 1500ft Nov 14

X 231 *Bovistella dealbata*. Recognized by its thick, separate threads, pedicellate spores, and habits of a *Lycoperdon* rather than of a *Bovista*.

Sunset Pk dry open ground (4500ft) Nov 17

X 236 *Catastoma circumscissum* (Berk.) Morgan. This you will note is the same as *Catastoma levispora* but different in its rough spores. Arc C along trail 3000ft Nov 10

X 235 The same. Egg C dry sunny hillside Nov 17 (3500ft)

X 247 *Catastoma Brandegeei*. See copy herewith.

West Fork Arc 3000ft along trail Dec 8



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X 238 *Catastoma Johnstonii*. See Note.*Cuc C. side of trail in Chap belt 3000+ft NW 10*224 *Phlebia*, unnamed. You should study it fresh and get its basidia and spores which I can not with any degree of certainty from the dried specimens, and then name and publish it. *Red Rock Springs.*267 *Polyporus dryadeus*. My first impression was that this was *corruscans* but the spores and setae differ. This has globose spores, very pale color. *Corruscans* has more elongated spores, deep colored. *Always log at ft. of Hog's Rock.*X 223 *Geaster hygrometricus*, Persoon. A large form.*Cuc. Canion*227 *Ustulina vulgaris*. *Cuc C. under Chap in Chap belt 4500ft NW 10*
Red Rock *Crustaceae pyrenomyces*258 *Trametes*. Resupinate. Very close if not *Trametes serpens*. Spores are hyaline, subglobose, 5-6 mic. to elliptical, 4-6. Pore tissue of pale hyphae.
*Red Rock what I took to be P. versipellis*265 *Polyporus hispidus*, Bagl. European species rare in our region. (Cfr. *Apus Polyporus* p. 359). See Note.*P. Rhodes from pepper tree 4500ft NW 10 Ontario*271 *Polystictus ochraceus*, Persoon. It could be held as a color form of *versicolor* with dark brown margin.*on Eucalyptus*256 *Myriadoporus*. These aberrations are abnormal conditions of *Porias* or *Polypores* and should not be named.*dead Q. Chap at Camp Baldy (4500ft) Dec 15 (L. M.)*249 *Immature*. Probably *Calvatia lilacina* var. *occidentalis*.*Every C. dry sunny hillside on trail 3000 Dec 1 near fire box*225 *Stereum occidentale*. See Note.*Red Rock Spring*

Hypogaeous fungi

X 219 *Hymenogaster Behrii*. See Note.*Cuc C under Chap 4500ft NW 10*— X 263 *Hydnangium*. I have not done much work on this class of plants but I expect to during the coming summer. In fact I should not be surprised if you see me in California

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#263
very shortly on this subject. This is mysterious to me. It has the appearance of Tuberaceae, and the spores which are subglobose, 10-12, sometimes globose and as large as 16 mic. have no apiculus and appear to be ascus spores but I find no asci. If Tuberaceae it is a Stephensia, but not the species Harkness gives and there is a discrepancy there. Tulasne ascribed to Stephensia globose, smooth spores and Tulasne did not make many breaks. Berkeley and Harkness claim the spores are rugulose. The whole matter is too uncertain to publish without a thorough study of original specimens and that I have not done as yet. You will hear more of this collection in the future.

reads P. Jefferyi read of A. Ant. C. 8000 ft Dec 15

217 Polystictus hirsutus, Willdenow. Another very different form from the usual plant. We do not have such colors in the East. This is well entitled to a name.

very common

222 Trametes. Resupinate and not known to me by name, but surely not Polyporus semisupinus and no resemblance to it.

different from one grabbed out of stump

257 Hypoxylon malleolus, Berkeley. This has other names but I have never worked out the history of Hypoxylons.

Daldinia concentrica or what I have been calling it.

218 Polyporus adustus, Willd. Very common. Bjerkandera is a juggle only.

242 Fomes roburneus, Fries. Which is a neat form of Fomes igniarius with smooth, black crust. These specimens have rare setae and abundant, globose, 4 mic. hyaline spores. It is a rare form. *adventum* on Arg. Hill.

226 Immature. No doubt your little western form Calvatia lilacina var. occidentalis.

very C. dry rocky hillside Nov 17 (3500 ft)

259 Polystictus hirsutus, Willd. This is quite close to the Eastern form. by dry hillside spring Upper A. Ant. Canis.

246 Polystictus versicolor. A pale form close to what is called Polystictus hirsutulus, Schweinitz, but it is not practical to designate the many color forms of versicolor.

Went Fork

X 244 Phallus imperialis, Kalch. which is the only form of



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Phallus impudicus we have in America. It differs only in its pink volva and is hardly worthy of a separate name. I think it is not introduced, at least it is common around Denver and other western stations. In the East it is only known from Washington, D. C. Cfr. Synopsis of Phalloids.

221 Stereum albo-badium, Schweinitz.

Orange wood upland.

262 Polystictus abietinus, Dicks.

241 Fomes Bakeri, Murrill. Yes, it is exactly the same as Fomes abramsianus of same author as to "type" at New York. I do not know that it was ever published, but if so it is exactly the same as his own Bakeri and both are only Fomes robustus without a crust. Cfr. Fomes Synopsis, page 243. *Lone Hill*



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